USER FRIENDLY TABLE OF CONTENTS

Equipment Familiarization 4

Probe Use and Care 5

Operating Instructions. 6-7

Semen Collection and Handling 8-9

Techniques of Preparing Smears 10

Interpretation and Evaluation. 11

Troubleshooting. 12-13

Battery use and Care. 14

Shipping and Packing Instructions 15

Address and Telephone Numbers . . . . . .Back

EQUIPMENT FAMILIARIZATION

Power Control
Special care should be taken when the unit is connected to a probe inserted in an animal. Check to see that the Power Control is completely counter-clockwise before the unit is switched to an operating position. When in actual use, the control should be increased slowly while the animal is being observed in order to prevent violent reactions.

Function Switch (right)
The **BATT** position is used for normal operation while using the internal power supply. Turn the Power Control (left) fully counterclockwise. Turn the unit Off by placing the Function Switch in the Off position. **The Switch should NOT be left in the Batt position when the unit is not in use as this will slowly discharge the batteries.**

The **TEST** position should be used only while checking the battery voltage and should not be left in this position, as the batteries will rapidly discharge. The battery voltage should be checked periodically, while in use, and during the periods when the unit is not being used. Always check the night before expected use to ensure you have time to recharge the unit if needed. The meter should indicate 350, if it is below 300, charge before using.

The EXT position has been used on older models for vehicle power source. We no longer recommend this as it is no longer enough power to operate the unit. You battery pack should collect at least 100 bulls on a single charge
Caution: do not attempt to operate this Ejaculator on 110 volts A.C.
This Ejaculator is designed to operate ONLY from D.C. battery power and cannot be adapted to operate from 110 volts A.C. Do not use the Ejaculator on an animal when it is being charged, there is always the possibility of a DEADLY short allowing 110 volts A.C. to pass through the unit directly to the animal. ***Since the unit uses a trickle charger, there is nothing to be gained, as any normal usage will drain the unit much faster than it is being charged!***

THE COMPLETE SET CONTAINS THE FOLLOWING:

1. **Ejaculator**
2. **Probe**
3. **Systems Operational Checker (“SOC”)**
4. **(2) Probe Cords**
5. **Hand Probe**
6. **Battery Charger**
7. **Collector and Vial Set**
8. **Carrying Case**

PROBE

Standard Precision Electronics has developed a new Probe that is so much more efficient as a power transducer that the stress on the animal is reduced to such an unprecedented level that it makes all other probes obsolete to any Rancher or Veterinarian that has seen it used. This new Probe also features a longer-extended hand assembly.

The physical configuration of the Probe provides the following exclusive advantages:

Alternate Connector - One in each leg of the Y-handle in case of damage or for convenience.

Hermetically sealed body - to prevent malfunction from moisture absorption.

Solid Electrodes - Advantages over hollow electrodes: (1) no tissue damage from overheating; (2) fecal material does not collect under electrodes; (3) firmly implanted ends do not pull loose and damage rectal wall.

Turned up Y-Handle - the only unbreakable configuration available - does not catch on restraining bar if bull goes down.

PROBE CARE

The prescribed cleaning procedures, between use on each animal, are imperative for disease control and possibly cosmetics but are not necessarily adequate for proper electrical performance.

It is ESSENTIAL that the electrodes be kept shiny clean to insure effective transfer of the stimulus to the animal. Use steel wool or sandpaper frequently to remove and prevent corrosive buildup. This should be done even when electrodes appear to be free of corrosion, as an invisible layer of corrosion can occur. It is vitally important that all foreign matter be removed from the body of the Probe, before use on each subsequent animal, for proper electrical performance as it could create an imbalance in transmission between the electrodes.

CAUTION; Care should be taken to prevent moisture from entering the connector. This can cause a short in the electrodes and give the animal a jolt. The unused connector should remain capped to prevent moisture contamination.

OPERATING INSTRUCTIONS

Hookup

Connect the Probe to the unit with the fifteen-foot (15') Probe Cord. Lubricate the Probe; elevate the tail until it is horizontal, not up over the back. Press the Probe into the rectum with a slow positive push. Aim the nose of the Probe downward to facilitate entrance, aligning the path of the Probe with the slant of the floor of the pelvis. The Probe electrodes on the two-electrode Probe should be ventrally oriented and the handles pointing upward.

Operation

Be sure that the Power Control (left) is turned all the way counter-clockwise, then put the Function Switch in the BATT position. From this point through a normal ejaculation, only the Power Control is used. Efficient and consistent results are dependent upon development of a satisfactory technique of manipulating the Power Control. This is best accomplished by careful observation of the animal's reaction and proper correlation of the relative meter indication in order to place the frequency of the stimulus and to ascertain the power level required for each particular animal being stimulated. Apply the stimuli, rhythmically, according to how the animal is reacting.

CAUTION: If you are using one of our new Probes as pictured in this manual, be careful about turning the Power Control up too far at first. Proceed very cautiously as you can expect to get a very prompt protrusion and erection followed by an immediate ejaculation, all possibly in 30 seconds (according to many reports from your colleagues who got one of the first Thousand of the new Probes).

Observe the underside of the belly; watch for movement indicating position of the penis. Apply stimuli, up to a given power setting, for 5 to 10 impulses (one-half minute or so) if there is no evidence of enlargement of the penis and forward movement through the sheath during this cycling, increase the power level slightly and proceed through another series of 5 to 10 impulses. If penis has not yet become visible, or it is just protruding from among the preputial hairs, reach up behind and above the neck of the scrotum with your strongest arm. (Use the bull's leg, above the hock, as a fulcrum for your arm.) Turn the fingers into the hand so they are bent at right angles of the first joint, and force these fingers into the neck of the scrotum, just like the action of a rake! Work your finger rake into the tissue until you feel the curvature of the sigmoid flexure, then force your hand forward until you feel the flexure uncoil. All the time you are performing this feat, it will help if you can maintain the rhythmic stimulations. Once the sigmoid flexure is straightened out, and the penis visibly extruded and beginning to take on a pink color, it is a matter of keeping the penis extruded and erect for a few more moments while increasing the power of the stimuli steadily until ejaculation occurs.

After ejaculation occurs, rotate the Power Control to its counter-clockwise position and place the Function Switch in the OFF position.

Semen Collection by Electronics

By Harold J. Hill, DVM - Veterinary Consultant

The Principle of so-called Electro-ejaculation is based on stimulation of the sympathetic-parasympathetic nervous systems. The posterior mesenteric and pelvic plexuses control, to a large degree, the following physiological functions: (A) smooth muscles of the head of the epididymis, vas deferens, ampulla of the vas deferens, ejaculatory duct system, accessory glands and that part of the urethra from the ejaculatory duct area to the external opening; (B) smooth muscles of the vascular system of the accessory gland area and the shaft of the penis; (C) diversion of the blood supply to the cavernous areas of the erectile tissue within the penis; (D) a concurrent relaxation of the retractor penis muscles; (E) erection of the muscle structures of the preputial sheath to accommodate movement to the shaft of the penis within and; (F) the instantaneous mixture of accessory gland fluids with spermatozoa and forcible ejection of this mixture. In conjunction with these segments of the autonomic nervous system the spinal nerves and their ganglia control the skeletal muscles in the case of electro-stimulation designed to produce ejaculation the lumbar and sacral spinal nerves are involved since they are contained in close proximity to the area within the pelvic cavity which receives the probe.

The preliminary sexual stimuli bombarding the bull wandering about in the pasture effects a progressive, methodical reaction, with each phase of the phenomenon taking place in order. A bull, downwind from a cow in heat, can hardly prevent the penis from undergoing a preset chain reaction. First a relaxation of the retractor penis muscles, then gradual engorgement of the cavernous spaces in the body of the penis, followed by an uncoiling action of the sigmoid flexure, this causing beginning protrusion, or at least, a movement of the penis along the underside of the belly. Next, the accessory glands begin to function and as the wind gets stronger (or the two principles move closer together), the fluid drips from the penis and the white blanched color is erased by the red of blood rushing into the capillary structure of the periphery of the penis. Final erection and actual ejaculation is dependent upon contact stimulation brought about when the glans penis seeks out and touches the warmth of the female genital tract. The rest is involuntary - and sudden.

The objective of the process of artificial ejaculation is to stimulate the normal physiological reaction as nearly as possible. One very important factor in anything having to do with sex is “Time”! Whether it is a bull or a boar or a giraffe, the animal cannot react immediately. Consider these phenomena when attempting to bring about a comparable reaction with a rather crude facsimile of a cow in heat, grazing peacefully upwind from a domesticated animal incapable of understanding the psychological processes demanded of him by man!

SEMEN COLLECTION AND HANDLING

The collector should be available during all stimulation, since ejaculation may occur at any time after application of power. Do not be too anxious to collect the fluids being emitted from the urethra. The first fluids are usually contaminated with urine, or are of such chemical nature as to adversely influence the motility of the sample. Wait until the color changes toward opacity and is thickened and white.

Remember, temperature is one of the most critical factors when collecting semen. Every effort should be made to prevent the sperm cells touching a surface, which is more than 5° F below body temperature or 3°F above! And this means rubber collection cones, test tubes, glass microscopic slides, microscope stages, Live-Dead Stain or Sodium Citrate diluting fluid! Failure to control temperature will have severe adverse effects on sperm motility. Valid evaluation of semen quality cannot be made without careful examination for progressive motility of sperm: coupled with a study of sperm morphology, percentage of live cells and concentration.

Evaluation of these characteristics of semen plus a careful physical examination of the animal is the only way to properly prognose the breeding potential of the bull.

Precautions to be Observed

For accurate representation and interpretation of the end result of Live-Dead staining technique, rapidly adhere to the following:

1. Avoid any adverse chemical or physical condition that might initiate necrosis of the sperm cells between the moment of ejaculation and the mixing of the stain and semen sample. This includes all surfaces contacted by the sperm during the collection process.
2. Keep temperature of the semen sample, the microscope slides, the stain and the working area within which the sample is to be mixed and smeared within a range of 3° to 5° F of a common temperature.
3. Arrest, as quickly as possible, the chemical reaction initiated when the Live-Dead strain and the semen sample contact. Accomplish this by heating the smeared slide immediately, to evaporate intercellular and intracellular moisture. A slide warmer will provide uniform, controlled heat and evenly distributed temperature that may range from 115° to 250°F.
4. Examine the smear and interpret the reaction before destruction of the life functions of the cells that were alive at the time of contact with the stain. This examination should be performed within 2 hours.

TECHNIQUES OF PREPARING SMEARS

Techniques of Preparing Smears

Formal laboratory training is not an absolute necessity for preparing smears and making microscopic examination of the slides. Follow the instructions listed below and generally reliable results can be expected.

1. Scrupulously clean all microscope slides and be sure that these are free of
2. grease or oily material. Wash the slides, submerge in alcohol and wipe dry with a lint-free cloth or paper tissue.
3. Maintain the slides and stain in an environment having a temperature of 95° to 100° F. Cooler temperature of stain will cause sperm to die, the percentage of loss being directly related to the lower temperature of the stain at the time of mixing. Collected ejaculate should be held in the same environment for a few minutes to allow temperatures to equalize.
4. Mix the semen sample well. Invert the collection tube and then return it to an upright position; remove the stopper and transfer a drop of semen from the edge of the stopper to one end of a warm slide. If possible, avoid trapping air bubbles in the drop. If bubbles should form, prick them with a sharp corner of another slide.
5. Observe the drop under low power magnification (100x). The warm slide should be placed on a warm stage with entire instrument being in a warm room. A rough estimate of the live/dead ratio can be made by appraising the "degree of vigor" of the sample.
6. Place a drop of warm stain, comparable in size to the semen on the slide adjacent to but not in contact with the drop of semen. Hold this slide in the left hand, with thumb and forefinger applied to the edges. The second finger can be extended beneath the slide to serve as a support. The end of the slide, opposite the drops, should be pointed away from the hand.

7. A second slide, to be used for smearing, should be held between the thumb and forefinger of the right hand in a position about a 45° angle to the slide in the left hand. Move the edge of the smearing slide in to the drop of stain. Rock the slide until the stain is evenly distributed across the leading edge. Semen should not be contacted at this point.

7. Now move the leading edge of the smearing slide, with evenly distributed stain thereon, toward the drop slide several times (8 to 10) to assure uniform mixing of the stain and semen. Draw the smearing slide backward away from the left hand, moving the smearing edge away, rapidly and evenly, along the length of the other slide to leave a uniform thin film covering the entire slide.
8. Heat and dry the slide immediately. It may be necessary to blow softly across the smear to assure rapid even drying.
9. When the smear is dry, scan the slide under low power objective, with dimmed light to determine the effectiveness of results.

INTERPRETATION AND EVALUATION

Interpretation and Evaluation

In order to minimize the error of interpretation of the Live-Dead reaction, the following characteristics have been designated as guidelines. Each must be visible in each of at least ten (10) microscopic fields before the stained slide can be considered to be a valid indicator of live or dead cells.

1. There must be definite homogeneous colored background over the slide.
2. There must be a distinct color contrast among the sperm cells to indicate that some were dead and some were alive at the time of ejaculation. Microscopic fields showing all of the sperm cells colored or all free of color are not representative of the sample and should not be used for tabulation.
3. The living cells must show an area of refraction, delineating the cell with a distinct halo. Those cells that absorb the stain may show a faint indistinct halo. In most instances, the leading semicircle of the head (galea capitus) of necrosing sperm will present a fuzzy, indistinct surface, which seems to merge insidiously with the background color. In some instances, only the posterior half of the dying sperm's head absorbs the stain. If the cell takes any stain at all, it is considered to be dead.
4. At least 100 sperm cells, representing a minimum of ten (10) different microscopic fields observed under the high dry objective (400x) should be counted. Each sperm cell that even partially appears within the area under observation should be tabulated. The percent alive is readily computed as a fraction of the total sperm cells counted.

TROUBLESHOOTING

WHAT CAN GO WRONG?HOW TO CORRECT SOME ADVERSITIES

1) Failure to get protrusion.
   - Did you turn on the power?
   - Check position of probe.
   - Assist by flattening out flexure.
   - Power level.

2) Failure to get ejaculation.
   - Did you turn on the power?
   - Check position of probe; change position; rotate for different points of contact; remove, lubricate again and reinsert.
   - Increase the level of stimuli.
   - Move probe in and out to create massage effect.
   - Check position of bull; should be standing on four feet, squarely, with restraining bar close against posterior aspect of hock with minimum of freedom to exert leg action.

3) Examine EVERY sample you obtain before discarding fluid.
   - Often times, the "pear juice" is just what the animal is capable of producing.
   - Examine for cellular material, which indicates degeneration, immaturity, sperm-cell exhaustion, infection or testicular hypoplasia.

4) Repeat attempt anytime after fifteen (15) minutes
   - Turn on power again.

5) Overly fat bulls are difficult to collect. Large, heavy bulls (0ver a ton) seldom will protrude penis without assistance. Bulls of the Zebu breeds, or cross breeds having a large percent of Brahman blood will seldom protrude the penis without assistance. Ejaculation should occur in 95%+ of attempts. If the top power level has been used and the penis has not protruded, take caution that the ejaculated sample is not lying in the folds of the prepuce - have the collection funnel in place BEFORE you touch the prepuce. Grasp the prepuce behind the hair tuft and pull downward and forward to erase the wrinkles in the channel.

6) If you still don't succeed - go home and meditate, cuss a little, call yourself stupid, swear you'll try again and succeed do just that!!!!

7) If you still don't succeed there are only two conclusions - the bull is a "dud" or you should have been a priest!

TROUBLESHOOTING

The hottest tip we can give you is this: **BEFORE ALL ELSE FAILS**, **PRACTICE SOME PRUDENT PREVENTIVE MAINTENANCE AND PRESERVE YOUR TWO (2) YEAR WARRANTY.**

- Although the SPE Ejaculator enjoys the unchallenged reputation for rugged dependability in an environment hostile to delicate electronic instruments, it is still susceptible to some impact damage when kicked, like a football, by a bull and may result in voiding the warranty.

- If left face up when fleeing from a rainstorm, it will collect water inside and will never be the same. Water damage voids the warranty.

- **DO NOT** let anyone else attempt to work on this equipment unless authorized by us as this automatically voids the warranty.

Possibly the best advice we can give is to read and re-read this manual as it represents the collective contributions resulting from the experiences of many of our 10,000 users over the last 45 years and could help to extend the useful life of your equipment many years beyond the normal warranty period and keep down the repair costs and inconvenience.

If you experience any problems with the SPE Ejaculator or any of its accessories - CALL US*!! If you leave a message Please include your Phone Number, Clinic Name and Address, plus your Name and possible times to reach you as well as the reason for your call.

The quality of service and rapid turnaround, which we are able to provide, is a two-way matter. Read the shipping and packing instructions before sending anything to us.

***All telephone numbers listed on the back cover of this manual.**

www.implegan.com 57 1 630 8026 cel 310 309 9002

BATTERY USE AND CARE

History of our Experience with Rechargeable Batteries

We made the first commercial application of rechargeable batteries with the introduction of the Ejaculator over forty (45) years ago, before razors, toothbrushes, etc. Our suggestions and comments are based on that experience using and servicing them. When fully charged, the batteries will do over 100 bulls. We are happy to say that when properly charged and cared for, they will last literally a lifetime. During our 35th year, our first Ejaculator (Serial #00001) came in, **for the first time** for repair. it still had the original batteries and would easily do 25 bulls or more on a single charge.

Battery Care

The life span of the batteries is dependent primarily on the care and attention given to keeping them properly charged. The internal power supply must not be used when the voltage is below 250 on the meter. The unit will continue to operate when the voltage is below 250, but the possible life span of the batteries could be greatly reduced.

How to Recharge

Place the Function Switch in the OFF position, insert the charger connector into the matching connector on the unit and plug the A.C. connector into a 110-volt outlet. Charge for 10 to 12 hours. After proper charging, the meter should indicate 350 or more when the Function Switch is placed in the Test position. **NOTE:** The meter may give a false indication of a full charge after only a few minutes of charging. If the switch is placed in the Test position for a few minutes, the meter will decrease noticeably if the unit is not fully charged. If you are in doubt about whether the batteries need charging, perform the following test: Place the Function Switch in the Test position for five (5) minutes. The voltage should initially be 350 or more and not drop appreciably in the five (5) minutes. If the voltage drops, the unit should be charged for 10 to 12 hours. Perform the preceding test after charging properly.

NOTE; NEVER LEAVE UNIT PLUGGED INTO CHARGER LONGER THAN NEEDED TO CHARGE (i.e. OVERNIGHT)